Appendix 1: Transport of biological materials and other additional laws and regulations

Several additional laws and regulations apply to the transport of biological materials. Particularly when international transport is involved, not only safety is important, but also security (considering *dual use* or strategic goods). The transport of biological materials is a complex topic. If in doubt, consult your BSO.

Additional laws and regulations may also be applicable to other topics in combination with biological agents (BA, whether or not GMO). The list below is not necessarily complete. If in doubt about the applicability of specific laws and regulations, or about their contents, it is recommended to seek internal advice from the BSO, animal experimentation expert, radiation expert or other relevant expert or official.

Concrete instructions for employees can be found:

- In the specific appendices and example forms of this KAM rule 13;
- In organisation-specific procedures and forms.
- In **SelfService** under **Registration of received biological materials** and **Delivery of courier shipment of biological materials.**

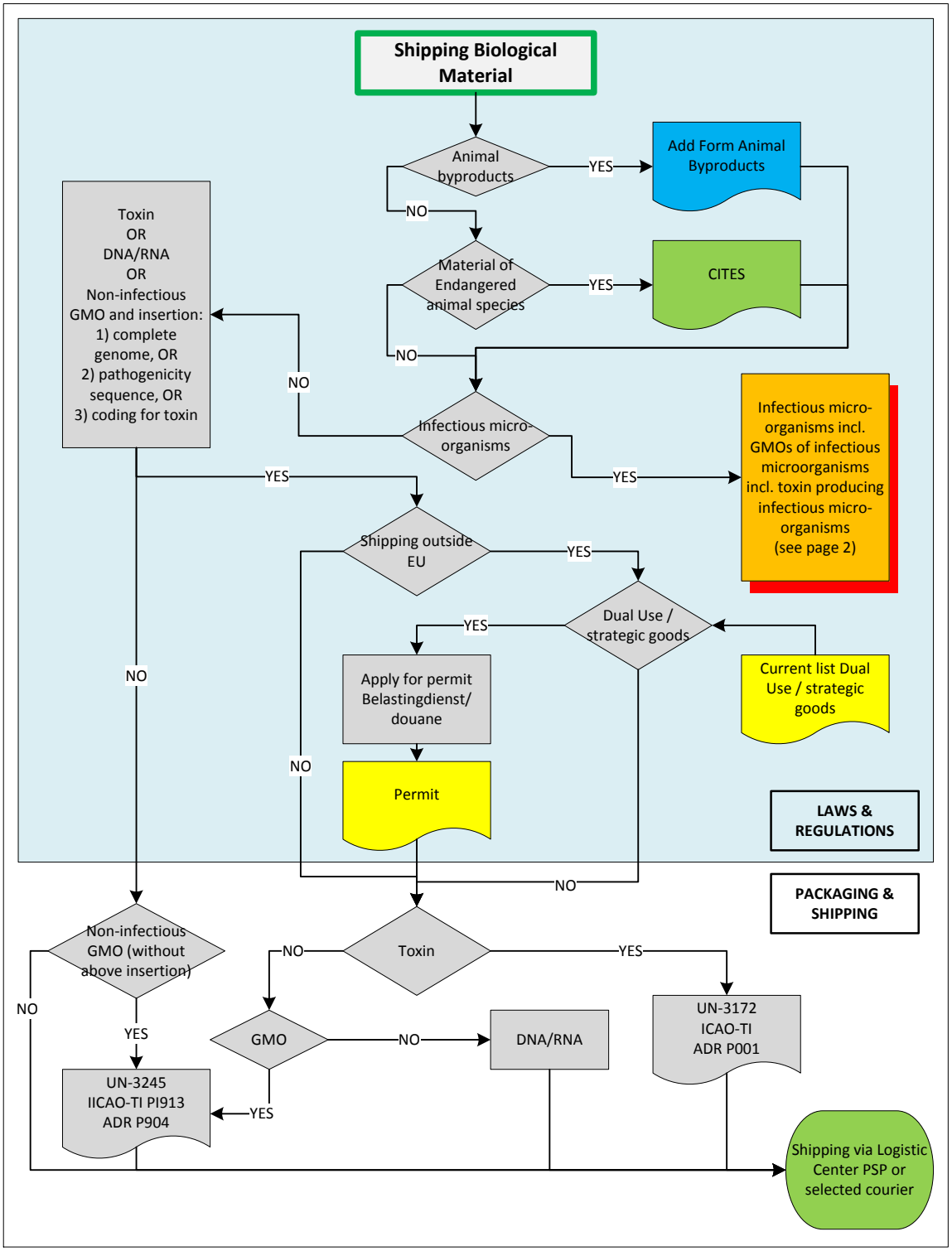
Consult the relevant expert in your organisation if you doubt whether certain laws and regulations are applicable, or if you are unable to find the necessary information.

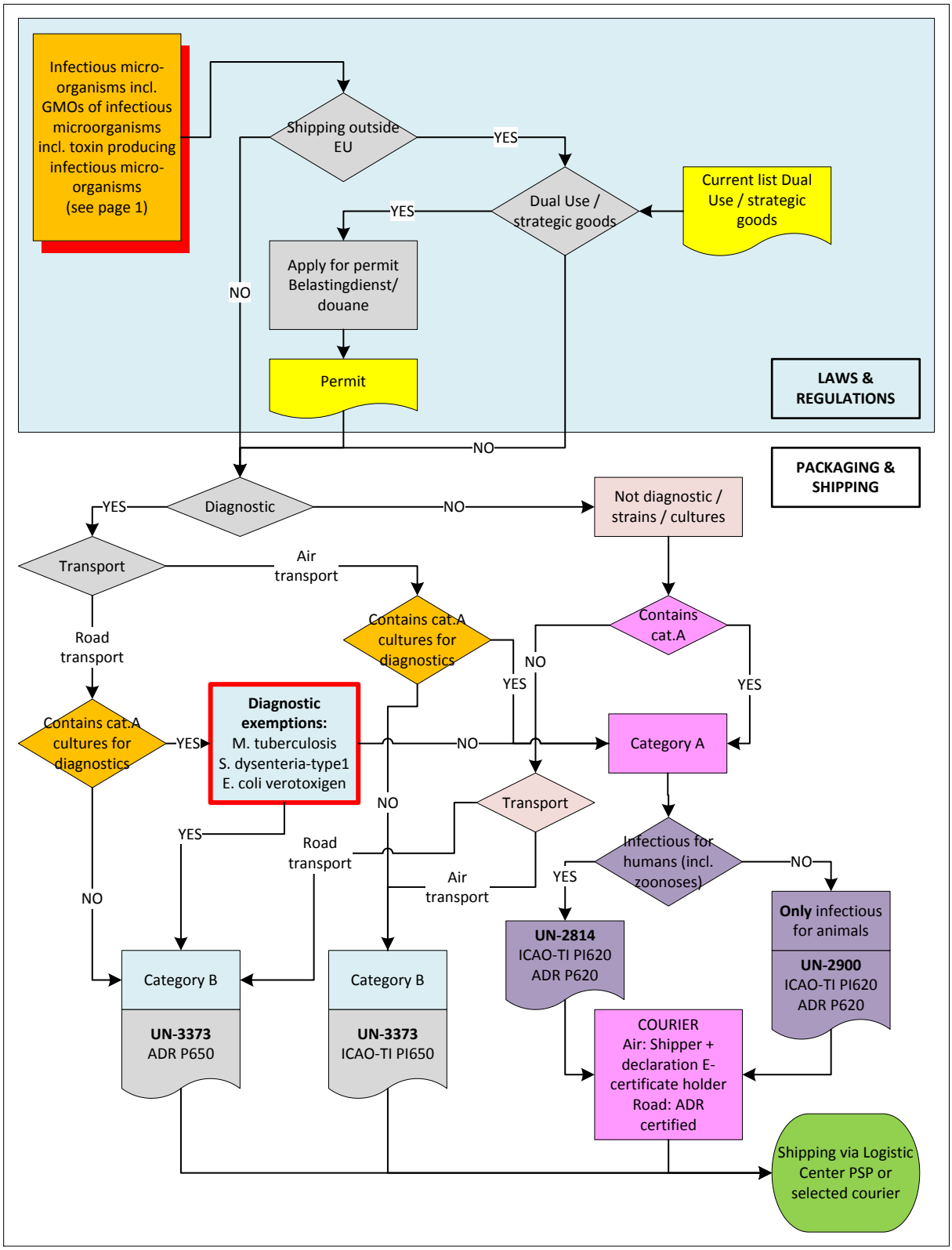
CONTENTS:

1. Transport of biological materials 2
1.1 Transport on the USPB site 4
1.2 Transport by road outside the USPB site 4
1.3 Shipping category A and B microorganisms (ADR and IATA) 5
1.4 Import and export of BA (incl. GMO) 6
1.5 Strategic goods and their shipments outside the EU 6
1.6 Other information about transport 6
1.7 Available forms for shipping, exporting and receiving biological materials 6
2. Other additional laws and regulations 7
2.1 'Wet Milieubeheer' and the 'Wet algemene bepalingen omgevingsrecht' (WABO) 7
2.2 'Besluit informatie inzake rampen en zware ongevallen' (BIRO). 7
2.3 Test animals 7
2.4 Animal pathogens 7
2.5 Animal by-products 7
2.6 Protected animals and plants (CITES) 8
2.7 Combination with radioactive substances 8
2.8 Biocides directive 8

1. Transport of biological materials

The two flowcharts shown below (made by the BSO of RIVM) can help in defining the applicable laws and regulations, whether a permit is required, the category under which it falls and the required packaging. The details are included in the text following the flowcharts.




Infectious micro-organisms incl. GMOs of infectious microorganisms incl. toxin producing infectious micro-organisms (see page 1)
Shipping outside EU
YES
NO
Dual Use / strategic goods
Current list Dual Use / strategic goods
Apply for permit Belastingdienst/ douane
Permit
LAWS & REGULATIONS
PACKAGING & SHIPPING
Diagnostic
Not diagnostic / strains / cultures
Transport
Air transport
Road transport
Contains cat.A cultures for diagnostics
Contains cat.A
Diagnostic exemptions:
M. tuberculosis
S. dysenteria-type1
E. coli verotoxigen
Category A
Infectious for humans (incl. zoonoses)
Only infectious for animals
UN-2900
ICAO-TI PI620
ADR P620
UN-2814
ICAO-TI PI620
ADR P620
Category B
UN-3373
ADR P650
Category B
UN-3373
ICAO-TI PI650
COURIER
Air: Shipper + declaration E-certificate holder
Road: ADR certified
Shipping via Logistic Center PSP or selected courier

1.1 Transport on the USPB site

The following attention points apply to transport of biological material to other areas on the USPB site:

- When transporting biological material on the USPB site, always use suitable packaging, such as a bio-container or bio-carrier (see the example in Figure 1). This is an unbreakable, leak-proof plastic box, fitted with a rubber seal in the edge of the lid and clamps for closing the box. If necessary, the bio-carrier can be autoclaved.
- During transport (in particular when liquids are involved), ensure that there is sufficient absorbent material between the primary sample container and the bio-carrier.
- Preferably use unbreakable plastic tubes for the primary sample container.
- When transporting biological material outside the laboratory or production space, make sure that a calamities procedure is available and known.
- The laboratory or production employee must transport the bio-carrier. Transport can not be done by employees of the mailroom or internal transport.

Figure 1: A bio-carrier with content (tube rack with tubes).

1.2 Transport by road outside the USPB site

The 'Wet vervoer gevaarlijke stoffen' (Dutch law) and the ADR (see the following paragraph) formulate requirements for transporting BA (whether or not GMO) and for storage during transport. If in doubt, consult your BSO.

The following attention points apply to transport of biological material to a destination outside the USPB site:

- Limit the shipment of living material and if possible, choose an alternative.
- When shipping blood samples: if possible, choose for sending serum instead of whole blood (also ask the sender to do this).
- When shipping diagnostic samples, you can use the packaging combination as used by the RIVM/IDS: a plastic primary sample container with absorbent material in a blister pack, inside a protective single-use foilbag in a plastic envelope with a zip closure.
- Use a **certified** carrier for shipping biological material inside the Netherlands if the BA:
    - belongs to category 2 and has an aerogenic route of infection;
    - belongs to category 3;
    - contains GMO.
- Always use a **certified** carrier for shipping biological material abroad.

1.3 Shipping category A and B microorganisms (ADR and IATA)

The 'UN Committee of Experts on Transport of Dangerous Goods' has categorised human and animal pathogens into category A and category B. Category A is the highest risk category.

Category A includes:

- Cultures of many microorganisms of risk group 3;
- Cultures of microorganisms of risk group 4;
- Diagnostic materials of microorganisms of risk group 4.

The lists of human and animal pathogens that fall under this can be found in paragraph 2.2.62 of the ADR (pp. 198-204), see: https://www.unece.org/trans/danger/publi/adr/adr2019/19contentse.html

Category A materials are sent under the heading:

- UN2814 = 'infectious substance, affecting humans' (this also includes zoonoses)
- UN2900 = 'infectious substance, affecting (only) animals'

Three exceptions apply to transport by road within the Netherlands:

- Verotoxigenic *Escherichia coli*;
- *Mycobacterium tuberculosis*;
- *Shigella dysenteriae* type 1.

If cultures of these microorganisms are intended for diagnostic or clinical purposes, then they may be transported as Biological Substances category B.

All other microorganisms fall under category B under the heading:

- UN3373 = 'Biological substances category B'.

For **air transport of category A** microorganisms, a *Shipper Declaration* must be added that has been signed by an 'E' Authorisation Holder. There are three 'E' Authorisation Holders in the Netherlands:

- SGS Dangerous Goods Services Nederland B.V. (tel: 0181-694460);
- Cargo Compliance Company BV (formerly DGM) (tel: 020-4496565);
- SCS Special Cargo Services Rotterdam SCS (tel: 020-6556262).

(When using a different carrier (e.g. DHL or World Courier), then they buy the signature from an 'E' Authorisation Holder.)

For category A, packaging instruction P620 is applicable for road transport (and PI620 for air transport).
For category B, packaging instruction P650 is applicable for road transport (and PI650 for air transport).

For air transport, see: https://www.iata.org/whatwedo/cargo/dgr/Documents/infectious-substance-classification-DGR56-en.pdf

Within the Netherlands, diagnostic materials (of category B) may be transported by road in specifically designated envelopes.

1.4 Import and export of BA (incl. GMO)
Additional laws and regulations apply to **importing** and **exporting** biological material.

- EC Directive EC/1946/2003 (for import/export to/from non-EU countries.
- The Cartagena Protocol on Biosafety (for the protection of biodiversity).

When **importing animal pathogens**, a permit must be applied for from the 'Nederlandse Voedsel- en Warenautoriteit' (NVWA), see https://www.nvwa.nl/onderwerpen/import-van-dieren-en-producten-van-dierlijke-oorsprong/producten-voor-onderzoek-en-diagnose-ziekteverwekkers-handelsmonsters-en-demonstratiemateriaal. See also the 'Regeling veterinairrechtelijke voorschriften handel dierlijke producten' (http://wetten.overheid.nl/BWBR0019235/), article 2.4.2.5 and article 2.4.2.6. The RIVM has an exemption for importing pathogens for scientific research.

1.5 Strategic goods and their shipments outside the EU
Strategic goods are also designated as *dual-use materials*. Apart from their useful application, these materials can also be used for undesirable purposes. This is a very broad concept, which apart from biological agents, can also include chemicals and technology (or the knowledge thereof) for both civil and military use.

A regulation (388/2012) is in force within the EU in order to prevent misuse, see http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:129:0012:0280:NL:PDF) which regulates the export, transhipment, intermediate trade and transit of these goods. The inspection and licensing authority is the 'Douane', part of the 'belastingdienst'.

This regulation may be applicable at the USPB site for e.g. the shipment of biological agents and their genetic elements (**DNA/RNA**) and/or toxins. The regulation is not applicable to vaccines.

When shipping biological material (**in certain cases also DNA/RNA, see the list IC353 below**) that is subject to the regulation outside the EU, a **permit** is required beforehand. Consult your BSO for the permit application.

The regulation contains lists with specific names of organisms or substances that fall under the regulation:

- List IC351: Human pathogens, zoonoses and toxins (from p. L 129/87).
- List IC352: Animal pathogens (from p. L 129/90).
- List IC353: Genetic elements and GMO (from p. L 129/91). This concern among other things genetic elements (DNA/RNA) of the organisms in the other lists stated. The list contains details for determining which genetic elements do or do not fall under the regulation.
- List IC354: Plant pathogens (from p. L 129/92).

1.6 Other information about transport
The WHO has made available on their website a convenient overview document '*Guidance on regulations for the transport of infectious substances 2017–2018*', which can be downloaded, see: http://www.who.int/ihr/publications/WHO-WHE-CPI-2017.8/en/

The '*Europese Vervoerders Organisatie*' (EVO) provides advice regarding the packaging and transport of hazardous substances (https://www.evofenedex.nl/advies).

1.7 Available forms for shipping, exporting and receiving biological materials
The following forms are available:

- Example pro-forma form: pro-forma invoice for shipping biological material abroad.

- Example transport document for animal by-products: form for transporting animal by-products.
- In **SelfService:** Registration of received biological materials
- In **SelfService:** Delivery of courier shipment of biological materials.
- Organisation-specific forms for transporting biological materials

2. Other additional laws and regulations

2.1 'Wet Milieubeheer' and the 'Wet algemene bepalingen omgevingsrecht' (WABO)

For the contained use of GMO, the establishment must have a permit on grounds of the 'Wet milieubeheer' and the 'Inrichtingen- en vergunningenbesluit'.

In order to be permitted to carry out activities with GMO, the establishment needs to have an **'omgevingsvergunning'** that is issued by the **Wabo competent authority**. The Stichting-ALt (St. ALt) can provide more information about the **'omgevingsvergunning'** in its capacity of permit holder. Within the framework of this legislation, it is essential that St. ALt has a complete and up to date overview of all GMO rooms at the USPB site, the entire GMO area and all numbers of GMO decisions and GMO notifications. The organisations at the USPB site must actively submit these data to St. ALt and inform their BSO of the same.

2.2 'Besluit informatie inzake rampen en zware ongevallen' (BIRO).

The BIRO is applicable to laboratories, production areas and experimental animal enclosures where activities with BA (whether or not GMO) take place at the two highest containment level (levels 3 and 4). This concerns informing the competent authority about possible disasters and having a calamity plan. St. ALt can provide more information on this.

2.3 Test animals

The Dutch 'Wet op de dierproeven' is applicable to all actions with experimental animals (http://wetten.overheid.nl/BWBR0003081/.

2.4 Animal pathogens

In a number of cases, the 'Gezondheids- en welzijnswet voor dieren' is applicable to activities with animal pathogens in combination with animals, see http://wetten.overheid.nl/BWBR0005662/. It is important to request an exemption for importing animal pathogens (see above under Transport).

2.5 Animal by-products

The definition of animal by-products is ‘entire animal corpses or parts of animals or products of animal origin, that are not intended for human consumption, including oocytes, embryos and semen’. It is important to realise that the definition also includes **cell lines** and products derived from blood, such as **calf serum**.

Animal by-products are categorised in three categories (https://www.nvwa.nl/onderwerpen/dierlijke-bijproducten/de-3-categorieen-dierlijke-bijproducten). This categorisation is based on the risk to public and animal health. It is defined for each category what is to be done with the product: destruction, conversion into fuel or raw materials for e.g. animal feed or medicines. If in doubt, consult the BSO as to whether your organisation has permission to work with materials of the applicable category and the relevant conditions that are applicable. A veterinary supervision number is required for shipping samples and for purchase or import.

The 'Regeling dierlijke bijproducten' can be found on http://wetten.overheid.nl/BWBR0032462/.

2.6 Protected animals and plants (CITES)

CITES concerns the trade and possession of protected animals and plants or products that are made from protected animals or plants, which are subject to stringent rules. It is important to realise that the CITES rules also include **cell lines** originating from endangered animals (*e.g. VERO cells*). A permit is required for using these cell lines. Contact the BSO for advice and for requesting a permit if necessary.

CITES is the abbreviation for 'Convention on International Trade in Endangered Species of Wild Fauna and Flora' (*Dutch: Overeenkomst inzake de internationale handel in bedreigde uitheemse dieren en planten*). The CITES treaty regulates the international trade in endangered animals and plants. The International CITES treaty is implemented in Europe by means of the EC CITES basic regulation and the EC CITES implementation regulation.

The 'Wet Natuurbescherming' refers directly to the EC CITES regulations. This law also regulates trade and possession for a number of species that are not subject to the CITES treaty. In principle, it is forbidden to collect, trade, transport or possess **indigenous protected** animals and plants. There are exceptions to this rule, e.g. for birds born in captivity. The trade and possession of **non-indigenous** animal and plant species is allowed in many cases. The dealer or the owner must have a permit or certificate. For details and the current lists of endangered animal and plant species, see:
http://minez.nederlandsesoorten.nl/content/cites-verordeningen and
http://eur-lex.europa.eu/legal-content/NL/TXT/PDF/?uri=CELEX:32012R0101&from=EN

2.7 Combination with radioactive substances

A permit within the scope of the 'Kernenergiewet' (KeW) is required for using radioactive substances. For information, employees can refer to the organisation's radiation expert. If the organisation does not (yet) have a permit, contact the ANVS (https://www.autoriteitnvs.nl/) or cooperation should be sought with another organisation at the USPB site that does have a permit.

2.8 Biocides directive

Biocides, including disinfectants, are used to combat harmful organisms. In addition to benefits, the use also entails risks for public health and the environment.
A biocidal product may only be used if it is authorized in the Netherlands and/or throughout the EU. Trade and use of biocides are regulated by the EU in Regulation (EU) 528/2012.
The Dutch government has set up a website about biocides (https://www.biociden.nl/). On this website, among other things, you will find information about the use of biocides. An employee can also contact the BSO of the organization for specific information.